

**BY ORDER OF THE COMMANDER
TRAVIS AIR FORCE BASE (AMC)**

**TRAVIS AIR FORCE BASE INSTRUCTION
91-212**



1 SEPTEMBER 2015

Safety

***THE BIRD/WILDLIFE AIRCRAFT STRIKE
HAZARD (BASH) REDUCTION PROGRAM***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction provides a base program to minimize aircraft exposure to potentially hazardous wildlife strikes. It implements AFI 91-202, *The U.S. Air Force Mishap Prevention Program* and AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*. This instruction applies to all host, associate and temporary duty (TDY) organizations on Travis AFB, including U.S. Air Force Reserve members and units. The 60 AMW/CC is responsible for implementation of this instruction. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include the guidance regarding Bird Watch Conditions (BWCs) Moderate and Severe; BASH Phase II window to reflect 1 hour +/- sunrise/sunset; Bird Dispersal Operations procedures; CP documenting approval notes in Global Decision Support System (GDSS2); addition of 21/3

Assault Runway; and lastly the addition of AFI 91-202 AMC Supplement preference of 7-14 inch optimum grass mowing height.

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1. General Information.

1.1. The purpose of this instruction is to significantly reduce the bird/wildlife aircraft strike hazard at Travis AFB. Aircraft bird/wildlife strikes cannot and will not be accepted as unavoidable. This instruction may also be used in conjunction with small mammal control operations. This instruction establishes procedures to reduce the Bird/Wildlife Aircraft Strike Hazard through bird/wildlife avoidance and control (including harassment, grounds maintenance, habitat modification, and depredation) to allow for operational mission departures/arrivals and local training.

1.2. This instruction will be implemented upon receipt and remain active year-round, as a significant bird hazard exists at Travis AFB. This plan contains two phases of operation: Phase I and Phase II. Phase I concentrates on wildlife control and dispersal and is in effect year round. Phase II is used in conjunction with Phase I procedures and concentrates on wildlife avoidance, using scheduling and airfield operating restrictions. Phase II is implemented during the September through April migration period. These dates may vary if migratory waterfowl arrive/depart the local area early/late. The Operations Group Commander (OG/CC) will implement and terminate Phase II upon advisement from Wing Safety that migratory wildlife populations have increased or decreased significantly.

2. BASH Program Information.

2.1. A significant bird/wildlife hazard exists at Travis AFB. The hazard is a result of the close proximity of the installation to several wildlife refuges and the presence of landfill facilities near both ends of the runways.

2.2. Two passes through the hills west of Travis AFB act as major flight paths for birds flying inland from the area. One of the passes is in close proximity to Travis AFB and is part of the Suisun Marsh, one of the last remaining natural wetlands in . Gulls, ducks, geese, and other birds leave and return to the marsh through this southwest pass en-route to the Sacramento River Delta and lands surrounding Travis AFB.

2.3. The wildlife strike problem at Travis AFB is further complicated by numerous hunting clubs who maintain habitats to attract waterfowl for hunting and nearby landfills which attract large numbers of gulls. Two landfills are located on opposite ends of the Travis AFB runways. The Fairfield landfill is located 1.5 miles from the approach end of Runway 03L and the Vacaville landfill is 4 miles from the approach end of runway 21L. Considerable gull flight activity between the two sites increases the risk to aircraft.

2.4. Agricultural activities play a key role in maintaining large populations of small birds in the spring and early fall, as well as 400,000 to 500,000 blackbirds during the winter months. A large rodent population on the base and the surrounding agricultural land supports a large number of raptors.

2.5. Bird strikes with waterfowl are a serious problem at Travis AFB. This is due to Travis AFB being situated on the Pacific Flyway. Travis AFB is also a wintering area for a very large population of ducks and a significant population of geese and swans. Migratory and daily flight activities by the birds create a substantial risk to flight operations. Ducks begin their daily flights just before sunrise and may continue to fly for up to two hours after sunrise. Morning duck movements begin east of Travis AFB with birds flying out of the Yolo Bypass, Hastings Slough, and the refuges north of Sacramento. Flocks flying east out of the Suisun Marsh and the Nurse, Denverton, and Hill Sloughs soon join these westerly flights. Low clouds, haze or fog often delays the departure of the birds, causing them to fly later in the day. Most late afternoon bird flights occur at sunset and may last up to an hour.

2.6. Bird Hazard Working Group (BHWG). The BHWG meets to review wildlife strike data, identify and recommend actions to reduce hazards, and changes in operational procedures. The BHWG meetings should discuss; however are not limited to the following topics:

Table 1. Bird Hazard Working Group (Not limited to the following topics)

- | |
|--|
| <ul style="list-style-type: none"> • Wildlife strike statistics • Bird activity • Habitat management/modification • BASH plan procedures • BASH awareness and education • Activities/results of the wildlife management personnel. |
|--|

2.6.1. The BHWG may meet quarterly. The BHWG is hosted by Wing Safety and is chaired by the Vice Wing Commander. Other members of the BHWG include:

Table 2. Other members of the BHWG

- Command Post
- Operations Group Commander
- Standardization/Evaluation
- Operations Support Squadron Commander
- Airfield Management
- Tower
- Current Operations
- Natural Resource Manager
- Civil Engineering Operations Flight
- Travis Aero Club
- 349 AMW Chief of Safety
- Wildlife control personnel

2.7. Concept of Operations. Bird/wildlife aircraft strike hazard reduction operations will be implemented in two phases.

2.7.1. **Phase I: Bird/Wildlife Control and Dispersal.** This phase also includes those procedures to discourage the presence of birds and warn of bird conditions. These measures will be implemented year round.

2.7.1.1. **Phase II: Wildlife Avoidance.** Procedures used in *conjunction* with Phase I to reduce the potential for wildlife strikes during the migratory waterfowl season. Phase II normally begins each fall (1 Sep) with the arrival of the migratory birds and will be discontinued in spring (30 Apr). This period can be shifted when significant migratory wildlife activity occurs earlier/later than the listed dates. The 60 OG/CC will implement Phase II upon notification from Wing Safety when the migratory activity has increased.

2.7.2. Bird Dispersal Operations. The Wildlife Control Personnel, Airfield Management or Wing Safety may accomplish bird dispersal operations. Dispersal operations include, but are not limited to the use of working dogs, falcons, pyrotechnics, and paint ball guns.

2.7.2.1. Wildlife Control Personnel, Airfield Management or Wing Safety, upon entering the airfield, will notify the tower of bird dispersal activities before using any pyrotechnics or ammunition. Once the tower has been provided initial notification of pyrotechnic use, it will not be required again while the user remains on the airfield. After exiting the airfield, the Wildlife Control Personnel, Wing Safety or Airfield Management must notify the tower of completion of bird dispersal activities. **NOTE:** Tower approval shall be obtained prior to discharge of pyrotechnic or ammunition operations above 300’.

2.7.2.2. Prior to conducting dispersal operations affecting aircraft runway usage, the control tower will be contacted for movement coordination. Personnel performing dispersal will inform tower of the location of birds and anticipated movement direction.

- 2.7.2.3. Tower will notify aircraft of bird dispersal operations via ATIS upon initial notification by Wildlife Control Personnel, Airfield Management or Wing Safety to ensure pilot situational awareness. "BIRD DISPERSAL OPERATIONS IN EFFECT AND MAY INCLUDE USE OF PYROTECHNICS"
- 2.7.2.4. Tower Ground Control (GC) will notify Wildlife Control Personnel, Airfield Management or Wing Safety when there is an aircraft within 10 Miles of Travis AFB to include landing runway when pyrotechnics are being used. **NOTE:** This advisory is informational only.
- 2.7.2.5. Tower watch supervisor will upgrade the bird watch condition (BWC) for the airfield as appropriate under advisement of the dispersal personnel. Once dispersal operations are complete and the birds have vacated the area, dispersal personnel will contact tower with this information.
- 2.7.2.6. Once bird dispersal has been accomplished Airfield Management will give tower the current BWC to be updated as appropriate.
- 2.7.3. Grounds Maintenance. By incorporating specific practices into the base land management plan, Travis AFB can maintain a flight line habitat less attractive to birds and other wildlife. Refer to AFI 91-202 AMC Supplement for further information. The grass height goal is 7-14 inches "effective height." This refers to the grass depth after it is cut, not the actual height of the mower blade. When cut to the minimum 7-inch level, slower growing grass species are not allowed to grow properly, while other species are allowed to grow to extreme lengths before being cropped back. The result is a patchwork of short, stumpy grass species interspersed with longer, fast-growing patches. Faster growing species of weeds should be eliminated or reduced by the controlled use of herbicides and the mowing contractor should maintain grass to achieve the 7-14 inches "effective height." A properly designed and maintained long grass management program strives to reduce the bird population on the airfield.
- 2.7.4. Habitat Modification. Meetings and conversations will continue with local California Fish and Wildlife Division representatives, Base Civil Engineering Squadron (Environmental and Operations Flights) and surrounding landowners to discourage industries that attract birds to the local area. These include, but are not limited to, seed crop planting in fields around approach and departure corridors, landfill operations, and industries or ventures that create standing water.
- 2.7.5. Remove Bird and Animal Carcasses From the Airfield. In an effort to avoid attracting scavengers, remove carcasses as soon as they are discovered. Forward remains which may have been caused by collision with aircraft to Wildlife Control Personnel or 60 AMW Flight Safety for identification and notify the Natural Resources Manager.
- 2.7.6. Pest Controls. Invertebrates and rodents are key food sources for many birds. Periodically survey and reduce these pest populations by trapping or other means when required.
- 2.7.7. Maintaining Drainage Ditches. Regularly inspect ditches to keep them clear of vegetation and debris. Maintain ditch sides as steep as possible (minimum slope ratio of 5:1) and mow vegetation to discourage wading birds and emergent vegetation. Improve

drainage as necessary to control temporary ponds or puddles and coordinate with Natural Resource Manager to ensure minimal impact to identified wetlands.

2.7.8. Eliminate Roosting Sites. Where possible, control roosts by vegetation management of roost sites. If necessary, prune trees to reduce the number of available perches.

2.7.9. Discourage Wildlife Feeding. Signs should be placed in picnic areas to educate the public on the hazard posed by feeding wildlife, particularly geese.

2.7.9.1. Depredation. Studies have shown, over time, wildlife become accustomed to harassment techniques. Depredation will be used as a last resort and only when there is grave threat to personnel or aircraft. Prior coordination with the installation Natural Resource Manager is not necessary in the event of an emergency. The Migratory Birds Treaty Act (MBTA) defines the guidelines which will be followed when executing the depredation permit. The installation Natural Resource Manager should be notified in a timely manner after depredation occurs. Wing Safety is the OPR for all planned depredation and permits.

2.7.9.2. All Military/DOD civilian personnel selected to take part in depredation will be certified by Security Forces Squadron through the shotgun qualification course IAW AFMAN 31-229, *USAF Weapons Handling Manual* and AFI 31-117, *Arming and Use of Force by Air Force Personnel*. Only qualified Airfield Management, Wing Safety personnel and authorized Wildlife Control Personnel will conduct depredation activities within the boundaries of the depredation permit.

2.7.9.3. 60 AMW/SE will issue a letter to 60 Security Forces Squadron (SFS) authorizing Wildlife Control Personnel to transport weapons and ammunition on base.

2.7.9.4. Transport weapons and ammunition IAW California state law.

2.7.9.5. Notify 60th Emergency Communications Center (ECC) and Command Post anytime firearms will be discharged on base. Include number of personnel, location, start time, and estimated completion time. Notify ECC and Command Post when shooting is actually completed.

2.7.9.6. The number of exterminated animals will be forwarded to Wing Safety.

2.7.9.7. All participants will wear reflective vests during depredation operations.

2.7.9.8. Instructions for dispersal operations will also apply for bird depredation.

2.7.10. Bird Watch Condition (BWC).

2.7.10.1. The standard BWC definitions are listed below and are used AMC-wide to warn aircrew and support personnel of the current bird threat to operations. Conditions are:

2.7.10.1.1. **LOW:** Normal wildlife activity (fewer than 5 large birds [waterfowl, raptors, gulls, etc.] or 15 small birds [terns, swallows, etc.]) on or above the airfield with a low probability of hazard.

2.7.10.1.2. **MODERATE:** Increased wildlife population (5 to 15 large birds or

15 to 30 small birds) in locations that represent an increased potential for a strike.

2.7.10.1.3. **SEVERE:** High wildlife population (more than 15 large birds or 30 small birds) on or immediately above the active runway or other specific locations (taxiways, in-field areas, and departure or arrival routes) that represent a high potential for a strike. Keep in mind a single bird in a critical location may elevate the BWC to SEVERE.

2.7.10.2. Aircrew, Wing Safety/Wildlife Control Personnel, Airfield Management or other operations personnel will call tower to report observed bird activity until it has dispersed.

2.7.10.3. Personnel authorized to adjust the BWC:

2.7.10.3.1. Increasing the BWC:

2.7.10.3.1.1. Airfield Management

2.7.10.3.1.2. Wing Safety/Wildlife Control

2.7.10.3.1.3. Tower Watch Supervisor

2.7.10.3.2. Decreasing the BWC from MODERATE or SEVERE:

2.7.10.3.2.1. 60 OG/CC

2.7.10.3.2.2. 60 OSS/CC

2.7.10.3.2.3. Airfield Management

2.7.10.3.2.4. Wing Safety/Wildlife Control Personnel

2.7.10.4. The announced BWC will remain in effect until the identified concentration of wildlife can be dispersed either through harassment or natural bird movement (MODERATE or SEVERE).

2.7.10.5. BWC Operations: When the BWC is MODERATE or SEVERE, all aircraft will be issued the appropriate BWC by Airfield Management, ATC or Command Post. Refer to paragraph 3.7.1.4 for Automatic Terminal Information System (ATIS) broadcast.

2.7.10.5.1. BWC Operational Restrictions:

2.7.10.5.1.1. All DoD aircraft, including non-AMC aircraft, will adhere to the restrictions during declared BWCs and BASH windows; operations violating these restrictions by DoD aircraft requires an OG/CC conditional waiver.

2.7.10.5.1.2. Non-DoD and exempt aircraft do not require a BWC/BASH window conditional waiver but are highly encouraged to modify their arrival or departure times to avoid BASH Phase II windows. These aircraft include:

2.7.10.5.1.2.1. Emergency aircraft

2.7.10.5.1.2.2. Commercial carriers

2.7.10.5.1.2.3. Foreign military aircraft

2.7.10.5.1.2.4. Life Flight aircraft

2.7.10.5.1.2.5. TACAMO Real-world alert operations (exercise operations will adhere to BWC restrictions)

2.7.10.5.2. **LOW:** There are no operational restrictions.

2.7.10.5.3. **MODERATE:**

2.7.10.5.3.1. Initial takeoff and full stop landings will be allowed only when departure and arrival routes avoid identified bird activity.

2.7.10.5.3.2. All local IFR/VFR traffic pattern activity will cease. Airborne aircraft will divert, hold, or land. When making this decision, Aircraft Commanders will use all available means to ensure arrival/departure routes avoid known bird activity.

2.7.10.5.3.3. Airfield Management or Wing Safety/Wildlife Control personnel will survey the runways/airfield environment for significant bird activity prior to any aircraft activity.

2.7.10.5.4. **SEVERE:**

2.7.10.5.4.1. All DoD flight operations (takeoffs, landings and approaches) are prohibited without BWC SEVERE waiver. 60 OG/CC, Vice Wing, or Wing Commander are the approval authorities.

2.7.10.5.4.2. Airborne DoD aircraft will divert or hold.

2.7.11. Phase II BASH Window for DoD aircraft. Deviations from this policy require OG/CC Conditional Waiver approval.

2.7.11.1. The Phase II BASH Window is in effect from one hour before to one hour after sunrise and sunset.

2.7.11.2. To the maximum extent possible, all operational and training missions, to include waiver exempt aircraft, should not be scheduled to depart/arrive within the BASH windows.

2.7.11.3. The total number of scheduled missions (training and operational) which fall within the BASH windows will be approved by OG/CC and annotated in the monthly Wing Operations Plan (OSS/OSO). Additionally, all missions will be reviewed and approved bi-weekly at the Air Operations Directive meeting.

2.7.11.4. The procedure to coordinate BASH Phase II conditional waivers is as follows.

2.7.11.4.1. DoD aircrews will:

2.7.11.4.1.1. Contact Command Post via radio (VHF 141.9, UHF 349.4) prior to engine start or NLT 100 NM prior to arrival to allow adequate time for approval.

2.7.11.4.1.2. Request an OG/CC Conditional Waiver approval through the CP, or validate a previously approved waiver is still valid.

2.7.11.4.2. ATC will:

2.7.11.4.2.1. Upon aircraft initial contact, if Command Post has not conveyed

an approved conditional waiver, instruct aircrew to contact Command Post
NOTE: ATC should refrain from soliciting an aircrew's waiver status beyond conveying approval or denial, waiver coordination is between the aircrew and CP.

2.7.11.4.2.2. If needed, pending OG/CC waiver coordination, direct aircraft to hold.

2.7.11.4.2.3. Waiver Request Denial. Relay denial to aircrew, aircraft will not be permitted to take-off or land. If airborne, ask the aircrew if they wish to continue to hold or if they wish to divert to another airfield.

2.7.11.4.2.4. Waiver Request Approval. Relay approval to aircrew and permit take-off or landing, inform the aircrew of the current BASH conditions.

2.7.11.4.2.5. Tower will contact Airfield Management for Bird Watch Condition (BWC) assessment.

2.7.11.4.2.6. In the event of an aircraft in-flight emergency or emergency fuel, the aircraft will be permitted to land, inform the aircrew of the current BASH conditions. NOTE: Aircraft declaring minimum fuel will continue to be instructed to contact Command Post to request a conditional waiver.

2.7.11.4.3. Command Post will:

2.7.11.4.3.1. Document approval note into GDSS2 for BASH Phase II waivers.

2.7.11.4.3.2. Contact OG/CC to request a Conditional Waiver.

2.7.11.4.3.3. Contact Tower to advise approval/denial of Conditional Waiver.

2.7.12. Travis Aircrew Off-station BASH Procedures. When operating at non-AMC airfields, aircrews will use the BWC definitions in paragraph 2.7.10.1 to assess the bird hazard and apply the operational restrictions in paragraph 2.7.10.5.1 Prior to transitioning at non-AMC airfields, planners/aircrews will obtain any available information on anticipated/actual bird activity at the airfield. Aircrews experiencing high wildlife activity at these locations will advise their respective safety office BASH representative. **NOTE:** The 618th Tanker Airlift Control Center (TACC) or designee has approval authority for AMC-tasked flight operations at non-AMC locations.

2.7.12.1. Low Level Operations: Regardless of BASH Phase, all low level routes will be assessed utilizing AHAS. AHAS will be used in mission planning to select a route that will allow for safe mission execution. At a minimum, AHAS will be checked prior to mission execution. In an effort to reduce the bird strike hazard along low-level routes, crews will observe the following restrictions on training missions:

2.7.12.1.1. AHAS Bird Condition LOW: No restrictions.

2.7.12.1.2. AHAS Bird Condition MODERATE: Crews will fly no faster than 250 knots on affected route segments.

2.7.12.1.3. AHAS Bird Condition SEVERE: Crews will fly no faster than 250

knots and no lower than 1000 feet AGL (3000 feet AGL at night) on affected route segments. Also, the aircraft commander will obtain 60 OG/CC approval prior to commencing any flight on affected route segments during Bird Condition SEVERE.

2.7.12.2. In all cases, operational mission priority must be weighed in determining waiver approval. When a waiver is approved for operation during BWC SEVERE at AMC locations, the local Operations Group Commander (or higher) must actively monitor launch and recovery of aircraft.

3. Organizational Tasking.

3.1. Vice-Wing Commander. Chairs the BHWG and is the approval authority for recommendations.

3.2. The BHWG is the primary agency responsible for the control of wildlife affecting airfield/flight operations.

3.3. Operations Group Commander.

3.3.1. Implement and terminate Phase II upon notification from Wing Safety of bird activity that has increased or decreased significantly.

3.3.2. Issue specific guidance on procedures during Bird Watch Conditions.

3.3.3. Make operational changes to avoid areas and times of known hazardous bird concentrations, mission permitting.

3.4. Wing Flight Safety.

3.4.1. OPR for the BASH program.

3.4.2. Complete annual review of this instruction and forward to HQ AMC/SEF electronically.

3.4.3. OPR for the BHWG, which may be held quarterly. Provide locally developed metrics to measure and report on wildlife hazard identification, habitat management, wildlife watch conditions, and wildlife harassment actions which have actually occurred in the previous quarter.

3.4.4. Responsible for reporting of all bird/wildlife strikes (damaging and non-damaging) IAW AFPAM 91-212 and AFI 91-204 to the USAF BASH Team using the Air Force Safety Automated System (AFSAS).

3.4.5. Recommend implementation/termination of Phase II of this plan in response to significant changes in the local wildlife population or wildlife strike potential. Sources of information include the wildlife control personnel, California Fish and Wildlife Division, visual sightings, and historical data.

3.4.6. Serve as the Quality Assurance Evaluator for the wildlife control program.

3.4.7. Maintain liaison with California Department of Natural Resources and Environmental Control, Fish and Wildlife Division, and HQ AFSC/SEFW to stay abreast of local wildlife populations, movement, and control techniques.

3.4.8. Educate base population on wildlife strike potential and procedures at Travis AFB, to include flying squadron safety offices. Also, educate aircrews of the wildlife strike potential at Travis AFB and transited airfields.

3.4.9. Ensure TAFBI 91-212 (BASH program) is available on 60 AMW safety web page. Notifies AMC/SEF if address changes.

3.4.10. In conjunction with Civil Engineering and Airfield Management, inspect the airfield at least quarterly for any conditions that may attract wildlife.

3.4.11. Consult with the Travis AFB Natural Resource Manager prior to trapping and relocation of base wildlife, unless trapping is accomplished by Wildlife Control Personnel within guidelines listed in the current depredation permit. The Wildlife Control Personnel will exercise his/her best judgment on when trapping wildlife is appropriate.

3.4.12. Obtain depredation permit from the Fish and Wildlife Service, 911 NE 11th Avenue, Portland Oregon 97232-4181.

3.4.13. Provide Wildlife Control Personnel an authorization letter to transport weapons and ammunition on Travis AFB for depredation purposes.

3.4.14. Provide the SFS a letter that states the weapons qualifications of Wildlife Control Personnel.

3.4.15. Establish monthly meeting with the Natural Resources Manager, Wildlife Control Personnel, and Air Force Civil Engineer Center/Travis Installation Support Team to discuss natural resource issues and coordinate management strategies. Suggested topics include reviewing bird strike species identification data and wildlife strike trends.

3.5. Wildlife Control Personnel.

3.5.1. Patrol Travis AFB airfield areas.

3.5.2. Notify tower of hazardous bird activity presence on or around airfield.

3.5.3. Conduct dispersal operations.

3.5.4. Coordinate with Pest Management Shop for rodent and insect control.

3.5.5. Consult with the Travis AFB Natural Resource Manager prior to trapping and relocation of base wildlife, unless trapping is accomplished within guidelines listed in the current depredation permit.

3.5.6. Consult with the Travis AFB Natural Resource Manager on natural resources management issues and strategies.

3.6. Command Post.

3.6.1. When requested, brief crews (including transients) on local Travis wildlife avoidance procedures. Broadcast the current BWC, if MODERATE or SEVERE, and advise crews of the Phase II BASH windows. In addition, Command Post will immediately notify the OG/CC any time the BWC increases to MODERATE or SEVERE or is downgraded. Command Post will broadcast the change in BWC to all aircraft.

Ensure transient aircraft involved in a wildlife strike fill out an AF Form 853, *Air Force Bird Strike Report*, and forward it to Wing Safety.

3.6.2. Disapprove any request from transient crews to train in the local area if Phase II restrictions are in effect. Ensure all aircraft, both local and transient, comply with flight restrictions listed in paragraph 2.7.11 of this instruction.

3.6.3. Coordinate delays, diversions, and release of AMC controlled aircraft based on BWC. Issue bird watch advisories to all aircraft arriving and departing Travis AFB. Notify TACC when wildlife conditions could result in possible aircraft diversions or delays.

3.6.4. Assign X113 delay code in GDSS2 for all AMC missions delayed due to wildlife hazard conditions.

3.7. Air Traffic Control.

3.7.1. Tower

3.7.1.1. Monitor level of bird activity using tower observation, aircrew reports, and wildlife control reports. Notify Airfield Management whenever wildlife activity on the airfield requires action from a wildlife control personnel.

3.7.1.2. Tower watch supervisors can raise the BWC based on wildlife activity. The tower watch supervisor can forward downgrade requests of the BWC to Airfield Management if visual observation of bird activity reveals activity is not a probable hazard to flying safety. After a reported bird strike, the BWC may be raised to MODERATE as necessary. At a minimum, the tower supervisor will ensure a reassessment of the BWC occurs.

3.7.1.3. Tower will notify Airfield Management and RAPCON when the BWC is changed. Airfield Management will notify Command Post.

3.7.1.4. Tower will broadcast the BWC on the ATIS.

3.7.1.4.1. The BWC shall be included on the ATIS when the BWC is MODERATE or SEVERE, regardless of Phase I or II.

3.7.1.4.2. When the BWC is rapidly changing, tower will include the following statement on the ATIS: "Due to rapidly changing bird watch conditions contact Travis Tower or Travis Approach for current bird watch condition."

3.7.1.4.3. During BASH Phase II, ATIS will broadcast the effective times of the Phase II windows.

3.7.1.5. Coordinate activities with bird dispersal units.

3.7.2. RAPCON. Traffic conditions permitting, RAPCON will use the northern radar traffic pattern or a minimum radar traffic pattern altitude of 3,000 feet to the south when a bird hazard exists at low altitude over the wetlands south of the runways.

3.8. Airfield Management.

3.8.1. Coordinate on-base wildlife controls including harassment, grounds maintenance, and depredation.

- 3.8.2. Coordinate with wildlife control personnel for assistance in wildlife dispersal.
- 3.8.3. Notify tower of hazardous wildlife/bird activity on or around airfield.
- 3.8.4. Notify Command Post of BWC.
- 3.8.5. Report known wildlife strikes to Wing Safety.
- 3.8.6. Notify the Travis AFB Natural Resource Manager to trap and relocate base wildlife. Retrieve or contact Pest Management Shop to retrieve carcasses on taxiways and runways.
- 3.8.7. Maintain any bio-acoustic and pyrotechnic equipment necessary for bird control. Personnel assigned will maintain proficiency on above devices. Only stock-listed, USAF approved munitions will be procured or utilized on the airfield. Munitions must be ordered through 60th Maintenance Squadron Munitions Flight. Munitions will be stored in approved areas in quantities not to exceed a projected 60-day supply IAW Wing Weapons Safety Guidance. An explosive facility license (AF form 2047) will be current and posted on the storage locker door or side panel.
- 3.8.8. Airfield Management will be responsible for notifying all aircrews (military and civilian) of the BWC and BASH window when the aircrews file their flight plan.
- 3.9. Civil Engineering.
 - 3.9.1. Monitor grass mower contractor compliance with the grass management program.
 - 3.9.2. Coordinate depredation.
 - 3.9.3. Conduct pest management including insect and rodent control.
 - 3.9.4. Complete submitted work orders in an expeditious manner to correct environmental conditions that increase BASH potential.
 - 3.9.5. Comply with habitat management. Seasonally inspect the "clear zone" areas off the approach end of runways 21L/3R, 21R/3L and 21 Assault/3 Assault for grain type crops, vegetation, or industrial development attracting wildlife. Maintain grass height IAW 2.7.2 and AFI 91-202 AMC Sup. If a contractor performs grass cutting, monitor performance to ensure compliance with this instruction. When necessary and legal to do so, eliminate foliage in drainage ditches. As a last resort, consult with the Water Board for the best course of action in dealing with large vernal pools that attract waterfowl.
- 3.10. Current Operations.
 - 3.10.1. Schedule takeoffs/arrivals to comply with BASH Phase II restrictions.
 - 3.10.2. Coordinate with 618 TACC to schedule mission departures to comply with BASH Phase II restrictions to the maximum extent possible.
 - 3.10.3. Enter BASH Phase I and Phase II start/end dates (normally 1 September and 30 April) into GDSS2 Airfield Data Base as a planning remark in the Temporary Restrictions/Planning Remarks section.
 - 3.10.4. Enter sunrise, sunset, and BASH windows on the daily schedule.

3.11. Maintenance Group.

3.11.1. Establish procedures for responding when an aircraft is known or discovered to have a bird strike. Procedures will include as a minimum:

3.11.1.1. Determine inspection requirements for all engine inlets/exhaust, engine fan blades, cooling air inlets, pitot/static inlets, and flight controls.

3.11.1.2. When a bird strike is discovered, collect all bird remains found to include whole birds, beak, feet, feathers, and blood smear remains. Bag remains and provide to Wing Flight Safety through established procedures. Complete as much of the AF Form 853 (bird strike report) as possible and forward to Wing Flight Safety.

3.11.1.3. If considering impounding an aircraft for bird strike damage for investigation, notify Command Post and Wing Safety immediately.

3.12. Public Affairs.

3.12.1. Maximize public awareness and understanding of the impact wildlife has on safe flying operations.

3.12.2. Inform internal and external audiences on the reason for, and ethical means of, controlling wildlife populations on Travis AFB.

3.12.3. Act as the approving official for information requests/news releases regarding the wildlife control program.

3.13. Operations Group Standardization/Evaluation (OG/OGV)

3.13.1. Establish procedures for aircrew following a known or suspected bird/wildlife strike. The procedures should direct crews to land and conduct a complete inspection of the aircraft. As a minimum, all engine inlets, engine fan blades, cooling air inlets, pitot/static inlets, and flight controls will be inspected for bird strike damage, regardless of the location of the known bird strike. Guidelines will also require aircrews to complete an AF Form 853 (Air Force Wildlife Strike Report) and AMC Form 97.

3.13.2. Disseminate BASH procedures for aircrew with the respective weapons systems regulations (OI 11-2MDSV3) and Flight Crew Information File/Books (FCIFs/FCBs). BASH knowledge will be continually evaluated and appropriate risk-reducing changes for aircrew flight operations will be disseminated via FCIF directives.

3.14. Weather.

3.14.1. Provide weather observations and forecasts as requested, to organizations evaluating the BWC. Include sunrise and sunset times in aircrew briefings during Phase II.

3.15. Security Forces Squadron.

3.15.1. Ensure Weapons Qualification Training is conducted and current for military/DOD civilian personnel. Provide training to Safety and Airfield Management to maintain currency in use of the shotgun, IAW AFM 31-229, *USAF Weapons Handling Manual* and AFI 31-117, *Arming and Use of Force by Air Force Personnel*. SFS will only certify qualified Airfield Management or Safety Office personnel. Authorized

wildlife control personnel will have a signed letter from Wing Safety to SFS stating current qualifications.

4. Reports and Forms.

4.1. All wildlife strikes (damaging and non-damaging) will be reported to Wing Safety on an AF Form 853, *Air Force Wildlife Strike Report*.

4.2. Wildlife strikes resulting in damage greater than \$20,000 will be investigated and reported IAW AFI 91-204, *Safety Investigations and Reports* and AFMAN 91-223, *Aviation Safety Investigations and Reports*.

4.3. All wildlife strikes will be entered into the Air Force Safety Automated System (AFSAS) as they occur.

4.4. Wing Safety will forward wildlife remains to the Smithsonian Institution IAW AFMAN 91-223.

4.5. Bird data information on bird strikes is gathered empirically by the Air Force BASH team (HQ AFSEC/SEFW), Travis AFB agencies, and the California Division of Fish and Wildlife. Examples include:

4.5.1. Peak concentration by species of bird, time of day, and location.

4.5.2. Bird harassment, depredation, ground maintenance, and habitat management.

4.5.3. Bird aircraft strike incidents at Travis AFB.

5. Local Transition Hazards.

5.1. The purpose of this section is to highlight both general and specific wildlife hazard information for local transition airfields. Aircraft commanders will follow BWC-moderate procedures if they receive a civilian ATC/ATIS hazard advisory to use caution for birds in the vicinity IAW AFI 11-202V3.

5.2. The area is situated on the Pacific Flyway and is in a wintering area for a very large population of ducks and significant populations of geese and swans. Bird strikes with these waterfowl are a serious problem. Migratory and diurnal flight activities by the birds create a substantial risk to flight operations. Ducks begin their daily flights just before sunrise, continuing for up to two hours after sunrise. Morning duck movements begin east of Travis AFB, with birds flying out of the Yolo Bypass, Hastings Slough, and from refuges north of . Flocks flying east out of the Suisun Marsh and Nurse, Denverton, and Hill Sloughs soon join these westerly flights. Low clouds, haze or fog delays the departure of the birds, causing them to fly later in the day. Most late afternoon flights occur at sunset, lasting up to an hour.

5.3. Before initial approach, aircraft commanders will check on the current wildlife hazard conditions. If information is not available (especially during Phase II), pilot discretion should be used before conducting the approach at the airfield. Airfields listed below may be in Phase II at the same period as Travis, and Operational Phase II restrictions would then apply.

5.4. Beale AFB (KBAB). During the Phase II period, a significant wildlife hazard exists. Large rice fields are located on the approach end of runway 33, providing winter nesting areas for waterfowl (swans, raptors). Local hunting clubs raise a large population of

pheasant in the same area. The airfield area has a large number of meadowlarks and horn larks during the Phase II period. The base also has a significant coyote population that can pose a year round hazard to operations. The Wildlife Control Personnel have employees working at KBAB to reduce the threats wildlife cause to aircraft operations. Contact base operations at DSN 368-2002 for current conditions.

5.5. Sacramento International Airport (KSMF). Extensive agricultural areas (rice and corn) and brush lands that are highly attractive to many species surround the airfield. The airfield is also surrounded by waterways, including the Yolo Bypass, Tule Canal, Sacramento River, the irrigation canal maze, and Teal Bend Golf Course. Civilian airports do not identify daily "Bird Watch Conditions". However, the FAA provides information about civilian airports in the quarterly publication of the Airport/Facility Directory-Southwest U.S. Pilots should consult NOTAMS and the control tower for the latest wildlife information. The Wildlife Control Personnel have employees working at KSMF to reduce the threats wildlife cause to aircraft operations. Do not conduct transition training at KSMF when Travis AFB is in BWC-Moderate or above IAW OI11-2MDSV3.

5.6. Stockton Airport (KSCK). Wildlife Control Personnel have not surveyed this airfield recently but it does have a landfill approximately two miles south of runway 29. The landfill turns the soil to reduce bird activity but caution should be used to avoid this area. In addition, wetlands are located south of the field. Tower may be contacted for current wildlife activity at (209) 982-9541.

6. Aero Club Operations.

6.1. The purpose of this section addresses the Bird/Wildlife Aircraft Strike Hazards affecting the Travis Aero Club.

6.2. The Travis Aero Club operates from a civilian airfield at Rio Vista Municipal Airport, CA (KO88). Bird/Wildlife Aircraft Strike Hazards exist to a lesser degree for Aero Club aircraft due to their lower airspeeds, reciprocating engines, and mission operations.

6.3. A significant bird hazard exists at KO88 where bird strikes with waterfowl are highly probable. The airport is bordered by the Sacramento River to the east and several canals surrounding the airport to the north, east and south. The canals cross the approach/departure path within close proximity of both runways. The strike problem is further complicated by large amounts of inland waterways to the east and southeast of the Sacramento River. Many farmers in this same region flood their fields, which attract waterfowl from October through March, and lease land to duck hunters.

6.4. KO88 is situated on the Pacific flyway and is within close proximity to wintering areas for very large populations of ducks and significant populations of geese. Migratory and diurnal flight activities by birds create a substantial risk to flight operations.

6.5. Travis Aero Club pilots will be responsible for all wildlife hazard avoidance. Standard Bird/Wildlife Aircraft Hazard (BASH) procedures are not applicable at KO88 since it is under FAA and local municipal authority. Aero Club pilots are reminded as a rule, significant bird activity can be expected from one hour before and after sunrise/sunset. Flight operations during this time period should be avoided, especially during the spring and fall migrations.

6.6. Prior to departure, Travis Aero Club pilots should check the AHAS web page at: <http://www.usahas.com> to determine bird activity around military fields or training routes along their expected route of flight. Pilots should also contact local airfield management at departure and destination airfields to assess actual bird activity.

6.7. Prior to departure, Travis Aero Club pilots will observe runway/airfield for wildlife activity which may pose a threat during takeoff or departure. Report wildlife activity to Aero Club Management and request assistance with wildlife dispersal if needed using the UNICOM frequency. Use the standard AMC BWC listed in 2.7.10.1 as a guide to determine the current bird threat.

6.8. Travis Aero Club management will notify inbound aircraft of known significant wildlife activity on or near the airfield posing a threat to arriving aircraft using the UNICOM frequency.

6.9. All damaging and non-damaging wildlife strikes will be reported to the 60 AMW Flight Safety on an AF Form 853 and will include remains if available.

6.10. On occasion Travis Aero Club aircraft may receive approval to conduct transition training or full stop landings at Travis AFB. Aero Club aircraft will follow procedures and operating restrictions contained within this instruction when operating at Travis AFB.

JOEL D. JACKSON, Colonel, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 13-213, *Airfield Driving*, 1 June 2011

AFI 31-117, *Arming and Use of Force by Air Force Personnel*, 17 March 2015

AFI 32-1053, *Integrated Pest Management Program*, 20 November 2014

AFI 32-7086, *Hazardous Materials Management*, 4 February 2015

AFI 91-202, *The U.S. Air Force Mishap Prevention Program*, 24 June 2015

AFI 91-202 AMC Sup 1, *The U.S Air Force Mishap Prevention Program*, 21 May 2012

AFI 91-204, *Safety Investigations and Reports*, 12 February 2014

AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*, 1 February 2004

AFMAN 31-229, *USAF Weapons Handling Manual*, 12 May 2004

AFMAN 91-223, *Aviation Safety Investigations and Reports*, 16 May 2013

UFC 3-260-01, *Airfield and Heliport Planning and Design*, 17 November 2008

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFSAS—Air Force Safety Automated System

AFSEC/SEFW—Air Force Safety Center – Wildlife Safety

AGL—Above Ground Level

AHAS—Avian Hazard Advisory System

AMC—Air Mobility Command

ATC—Air Traffic Control

ATIS—Airport Terminal Information System

BAM—Bird Avoidance Model

BASH—Bird Aircraft Strike Hazard

BHWG—Bird Hazard Working Group

BWC—Bird Watch Condition

CES—Civil Engineering Squadron

DER—Departure End of Runway

DOD—Department of Defense

EPA—Environmental Protection Agency
FAA—Federal Aviation Administration
FCB—Flight Crew Bulletin
FCIF—Flight Crew Information File
GDSS—Global Decision Support System
IAW—In Accordance With
IFR—Instrument Flight Rules
IMC—Instrument Meteorological Conditions
MBTA—Migratory Birds Treaty Act
OPR—Office of Primary Responsibility
RAPCON—Radar Approach Control
SFS—Security Forces Squadron
TACAMO—Take Charge and Move Out (Navy VQ-3)
TACC—Tanker Airlift Control Center
UFC—Unified Facilities Criteria
USDA—United States Department of Agriculture
VFR—Visual Flight Rules
VMC—Visual Meteorological Conditions